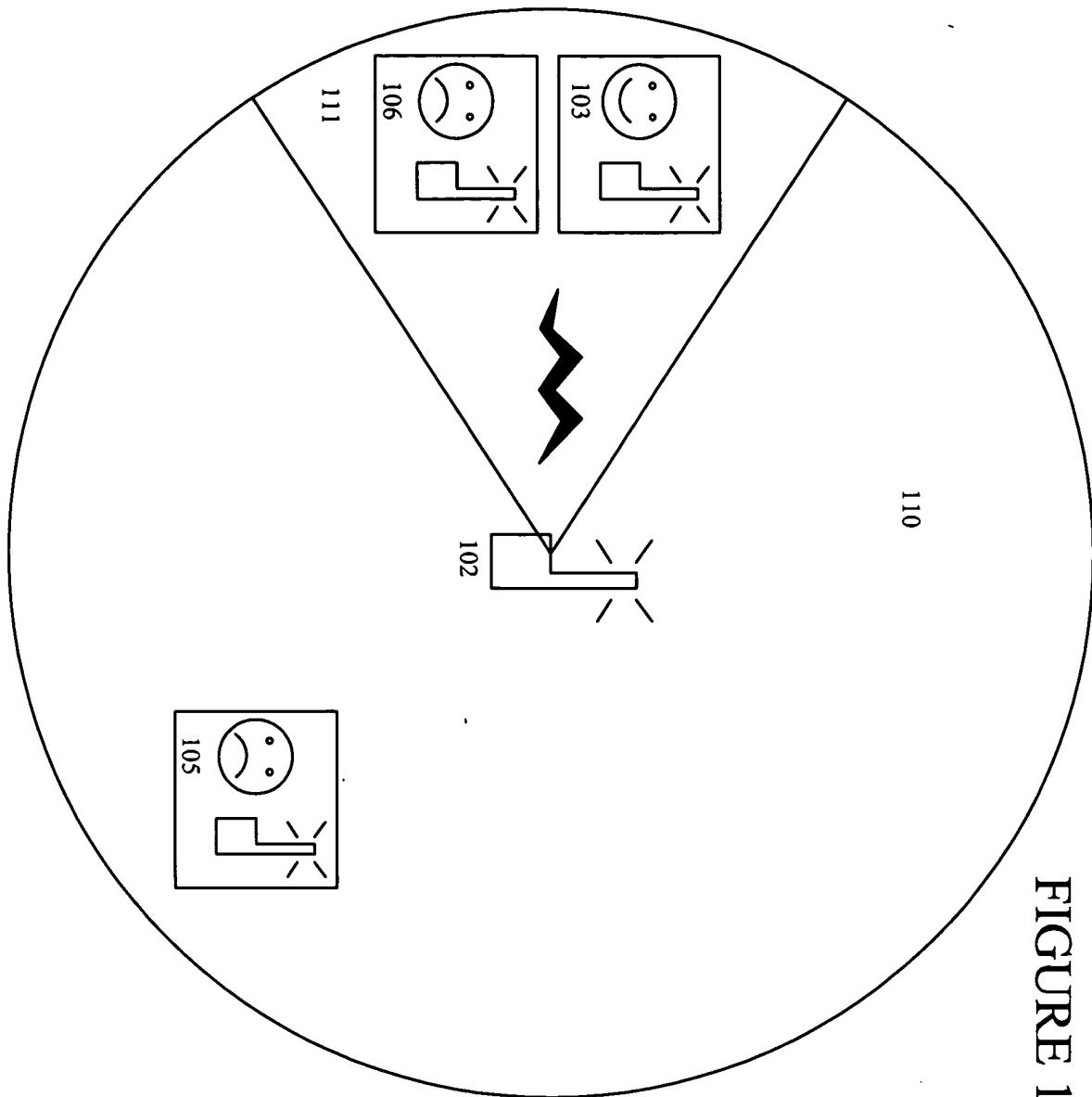


FIGURE 1



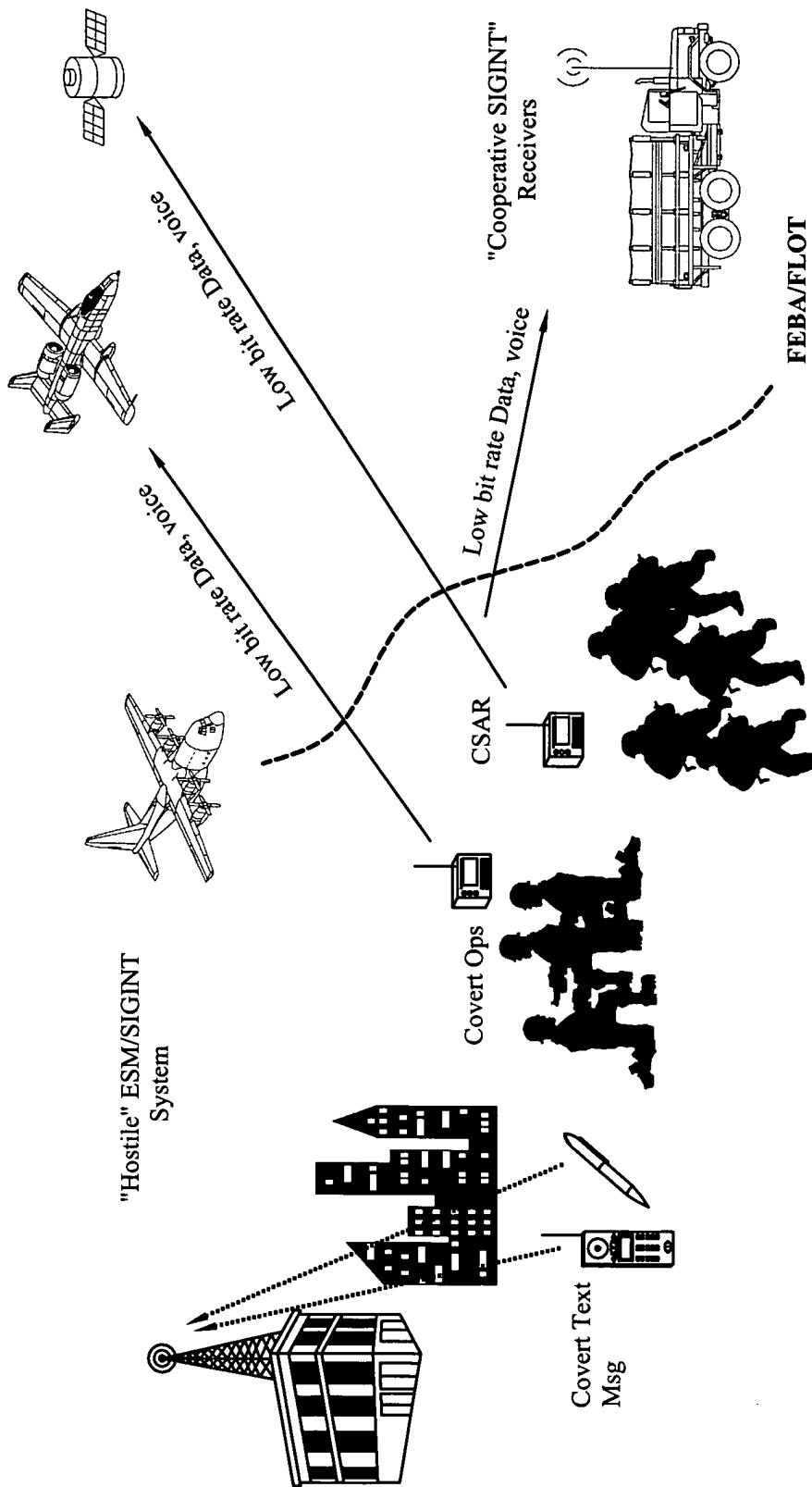


FIGURE 2

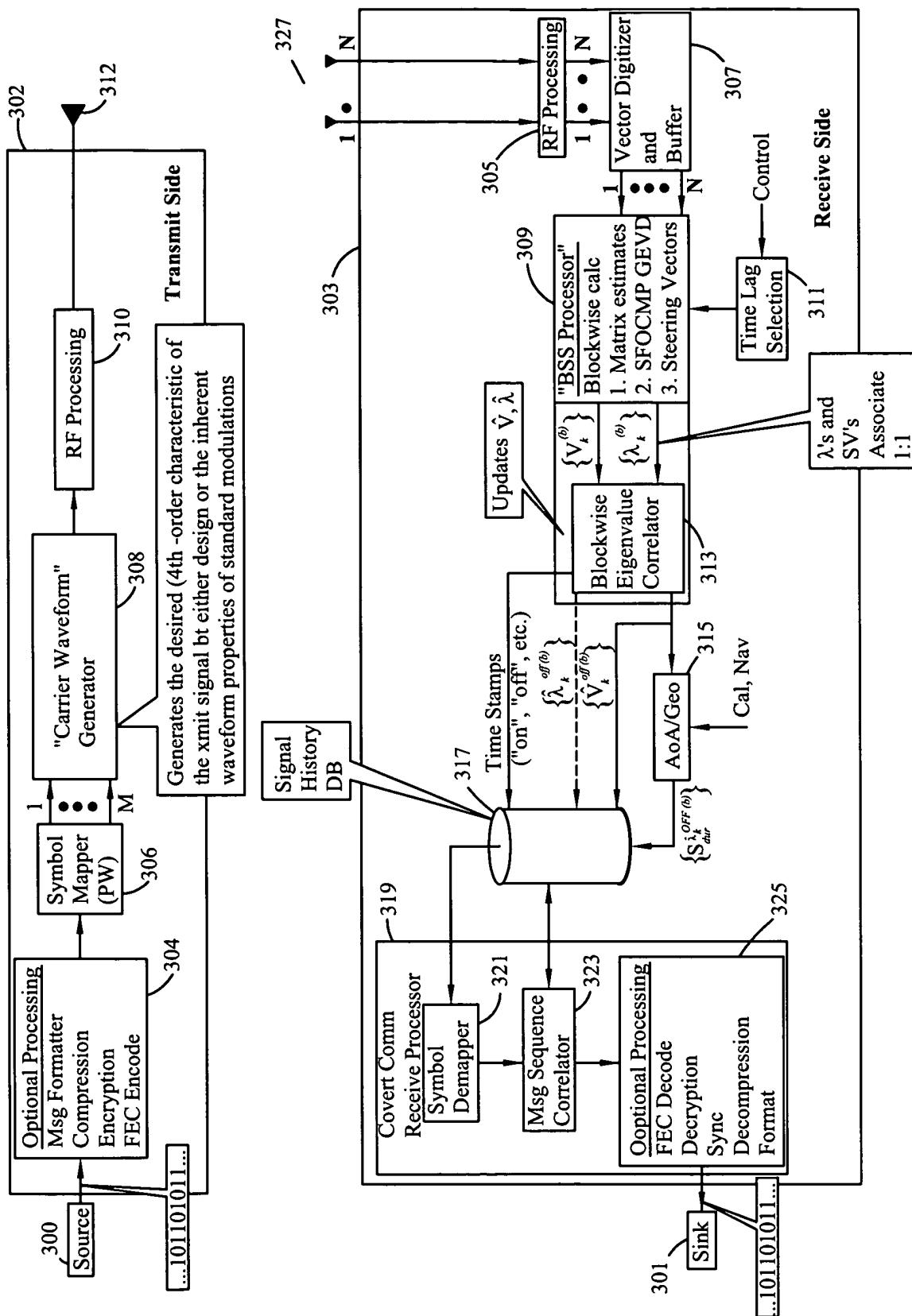
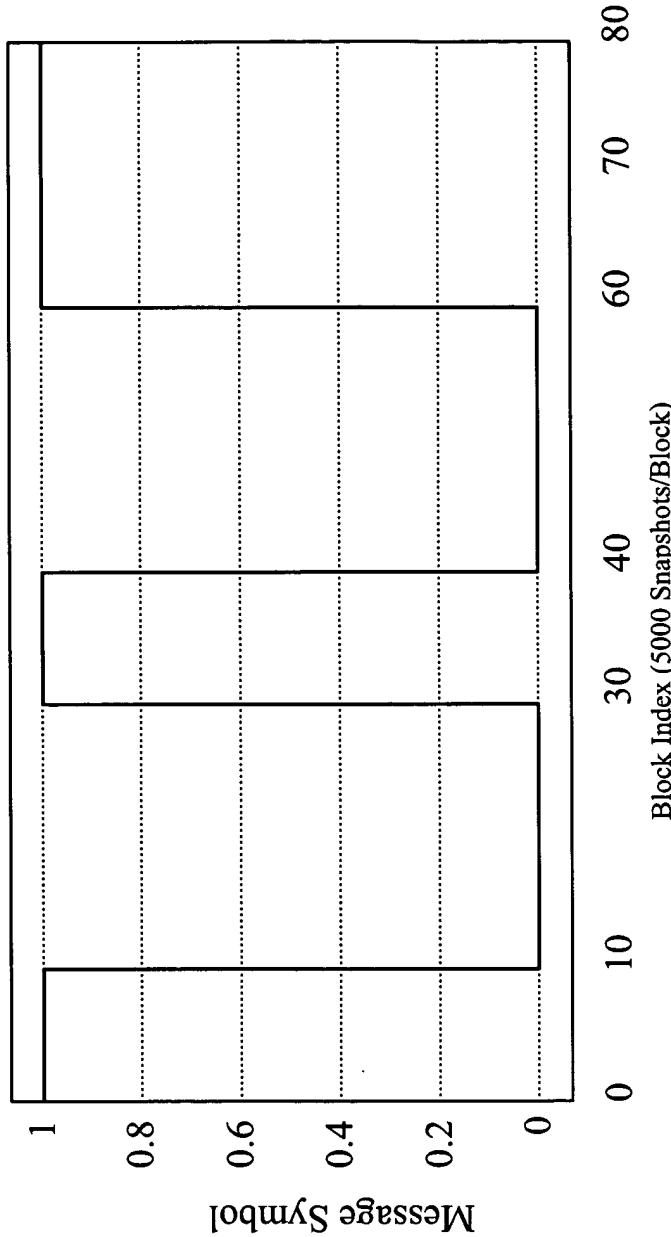
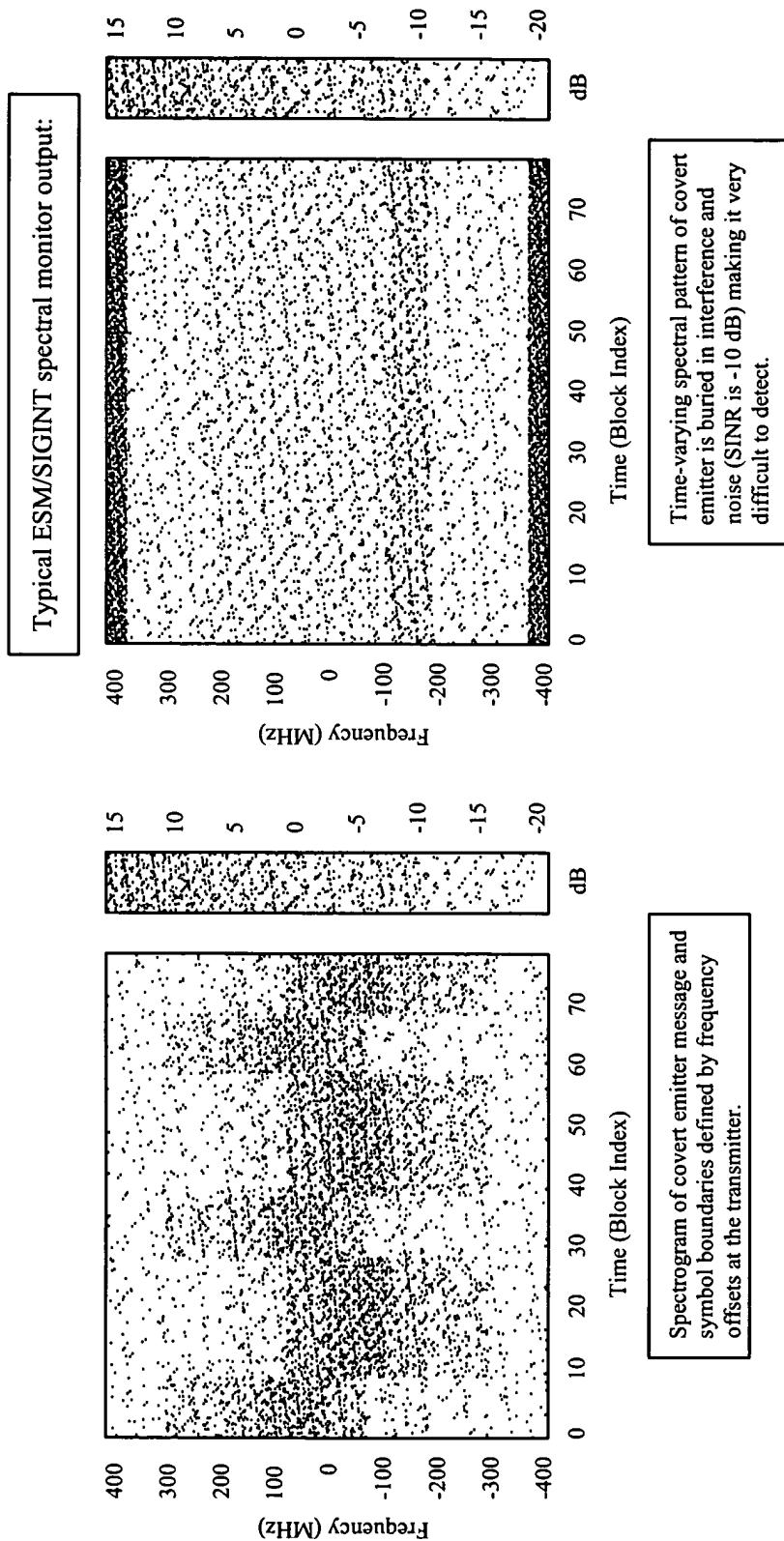


FIGURE 3



Covert message sequence: **1 0 1 0 1 1** where symbols are:  
**1:** 10 5k-sample blocks (50000 samples from array)  
**0:** 20 5k-sample blocks (10000 samples from array)  
Covert baseband waveform consists of "narrowband" random noise (Laplace distribution)

FIGURE 4



**FIGURE 5a**

**FIGURE 5b**

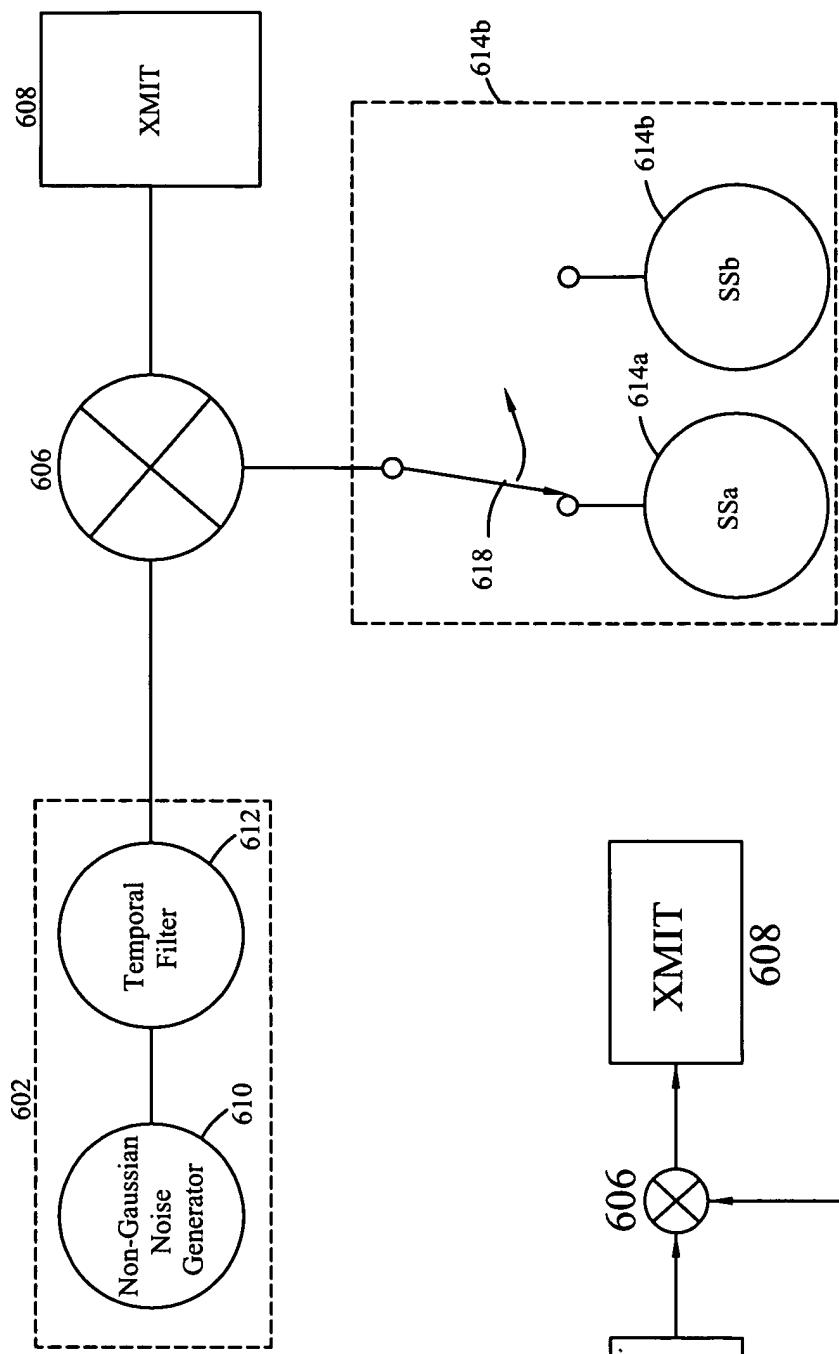


FIGURE 6b

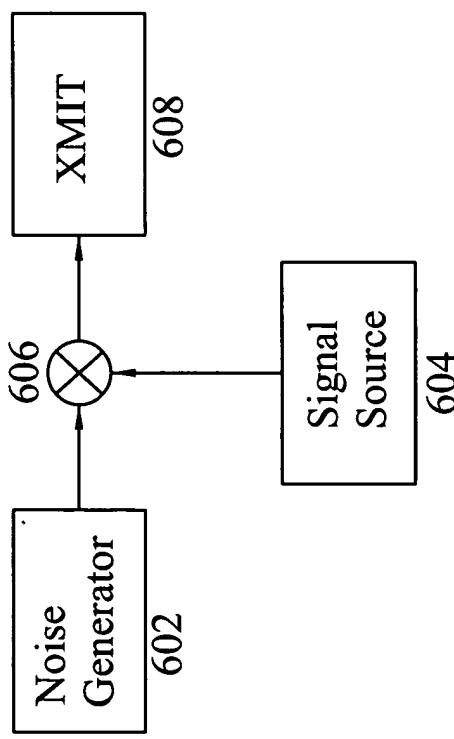


FIGURE 6a

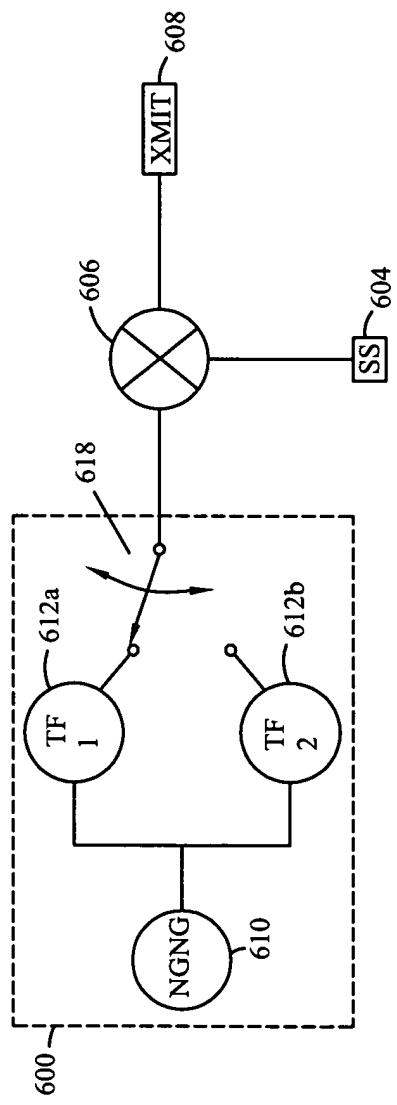


FIGURE 6c

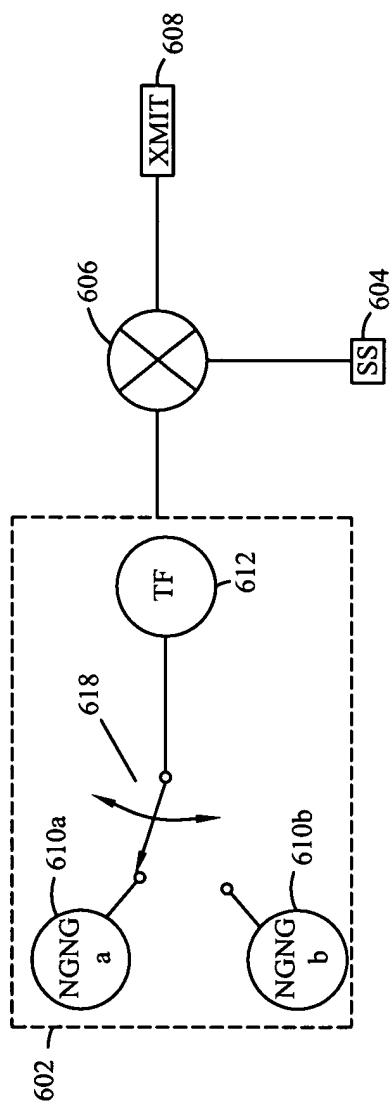


FIGURE 6d

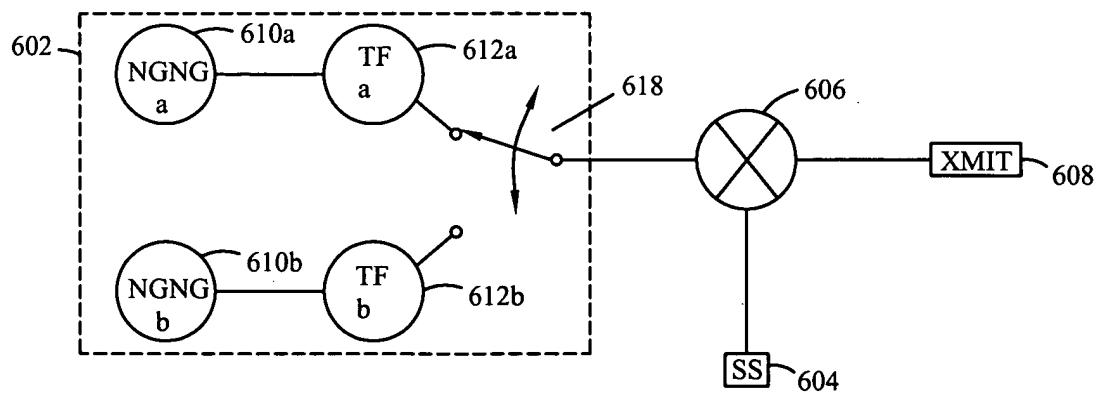
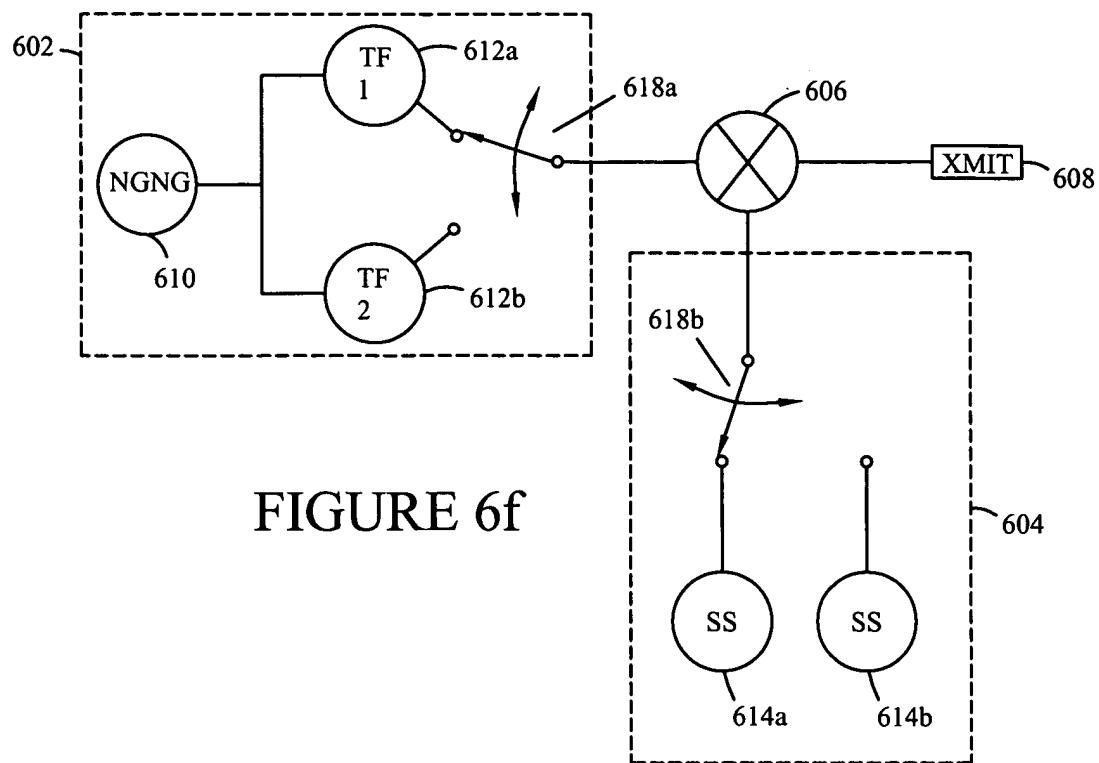


FIGURE 6e

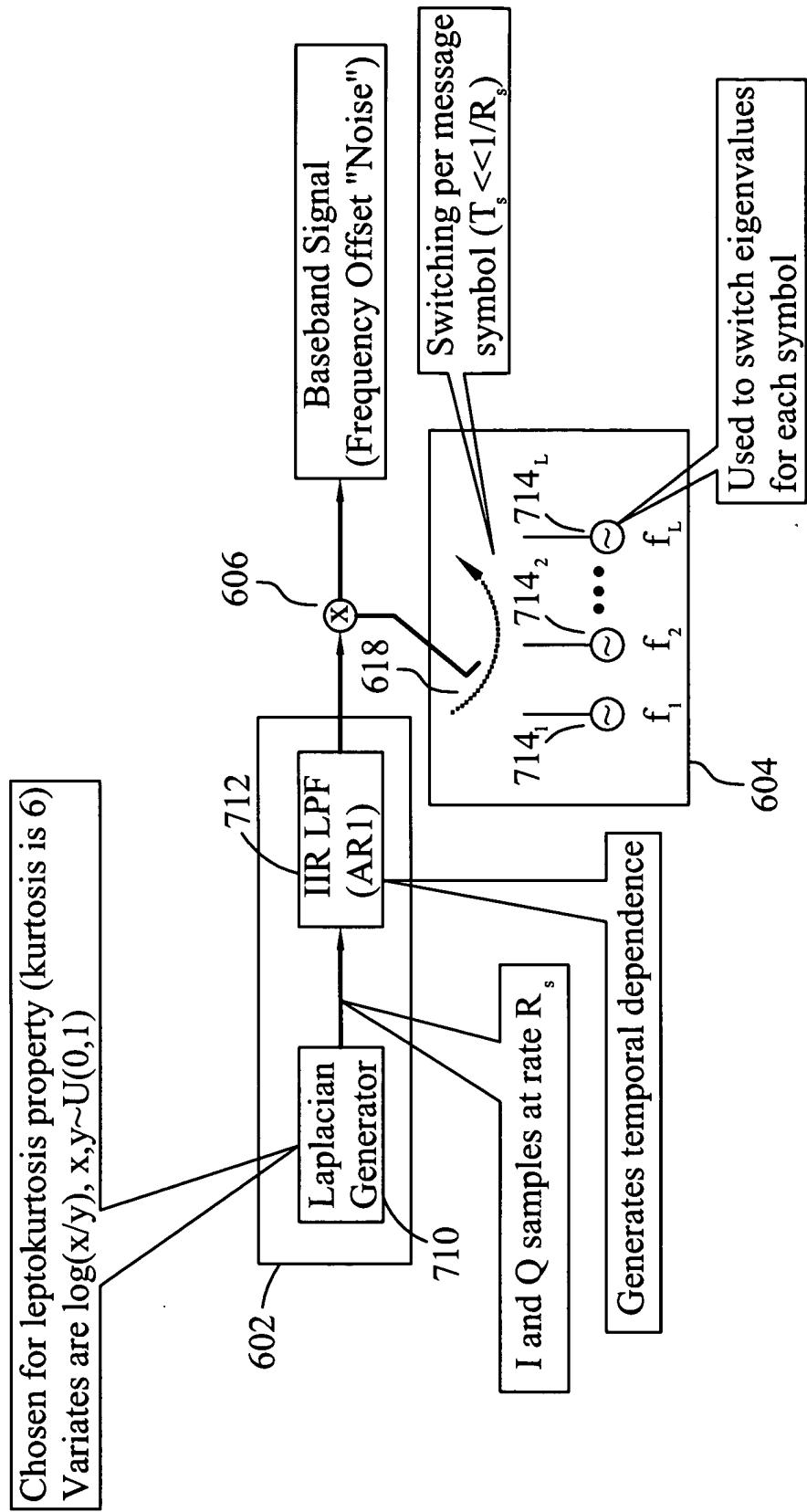
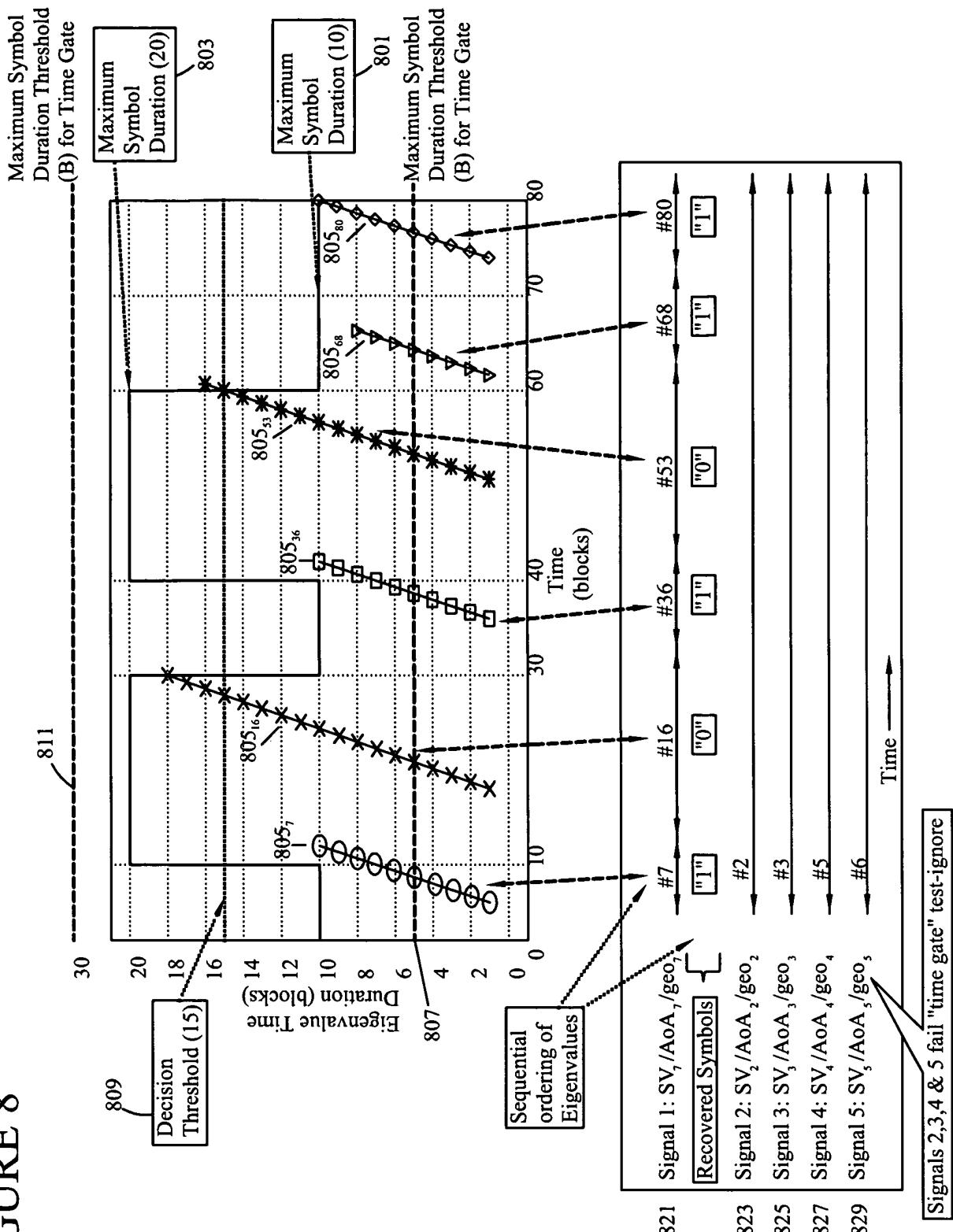


FIGURE 7

**FIGURE 8**



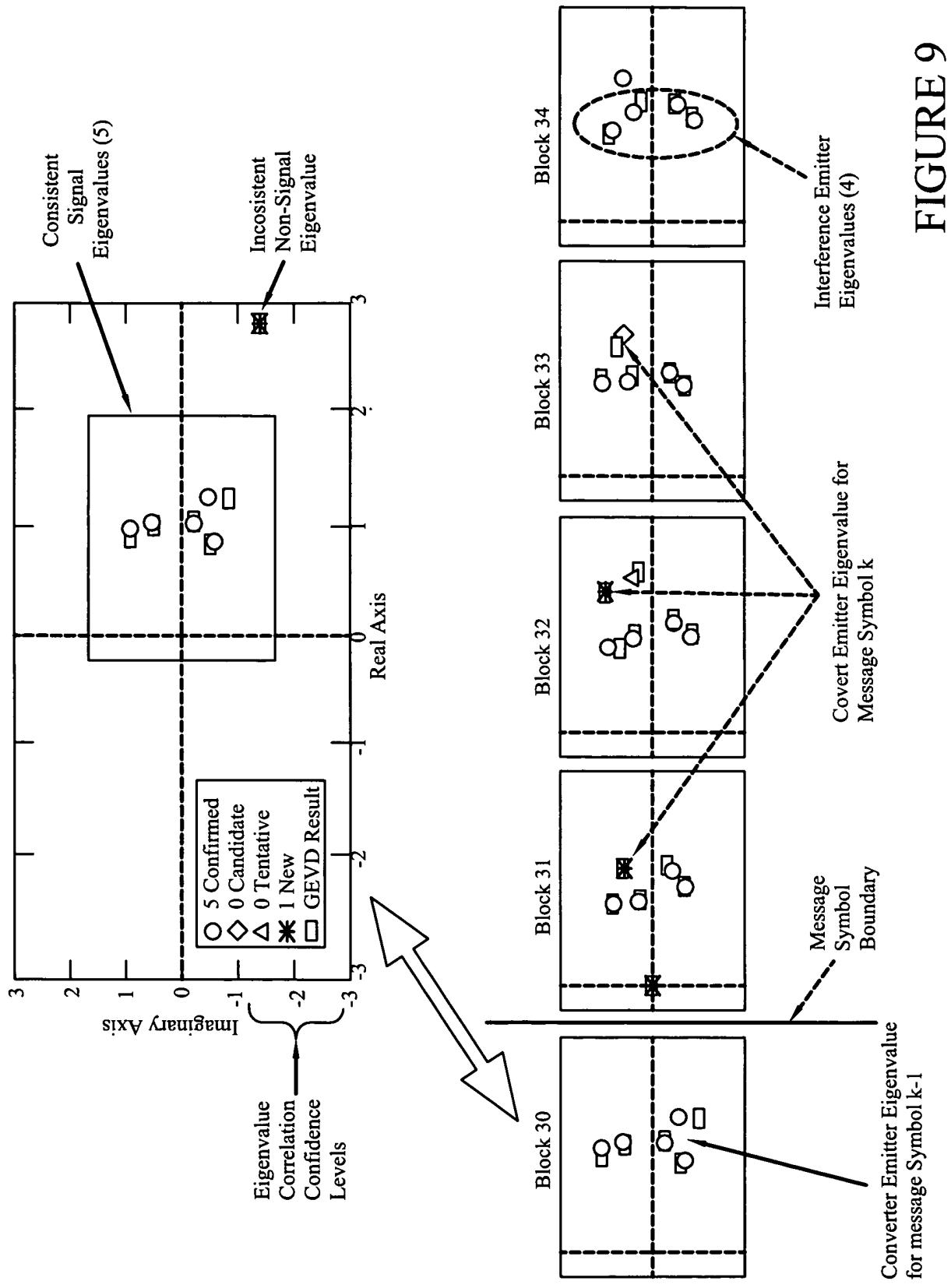


FIGURE 9

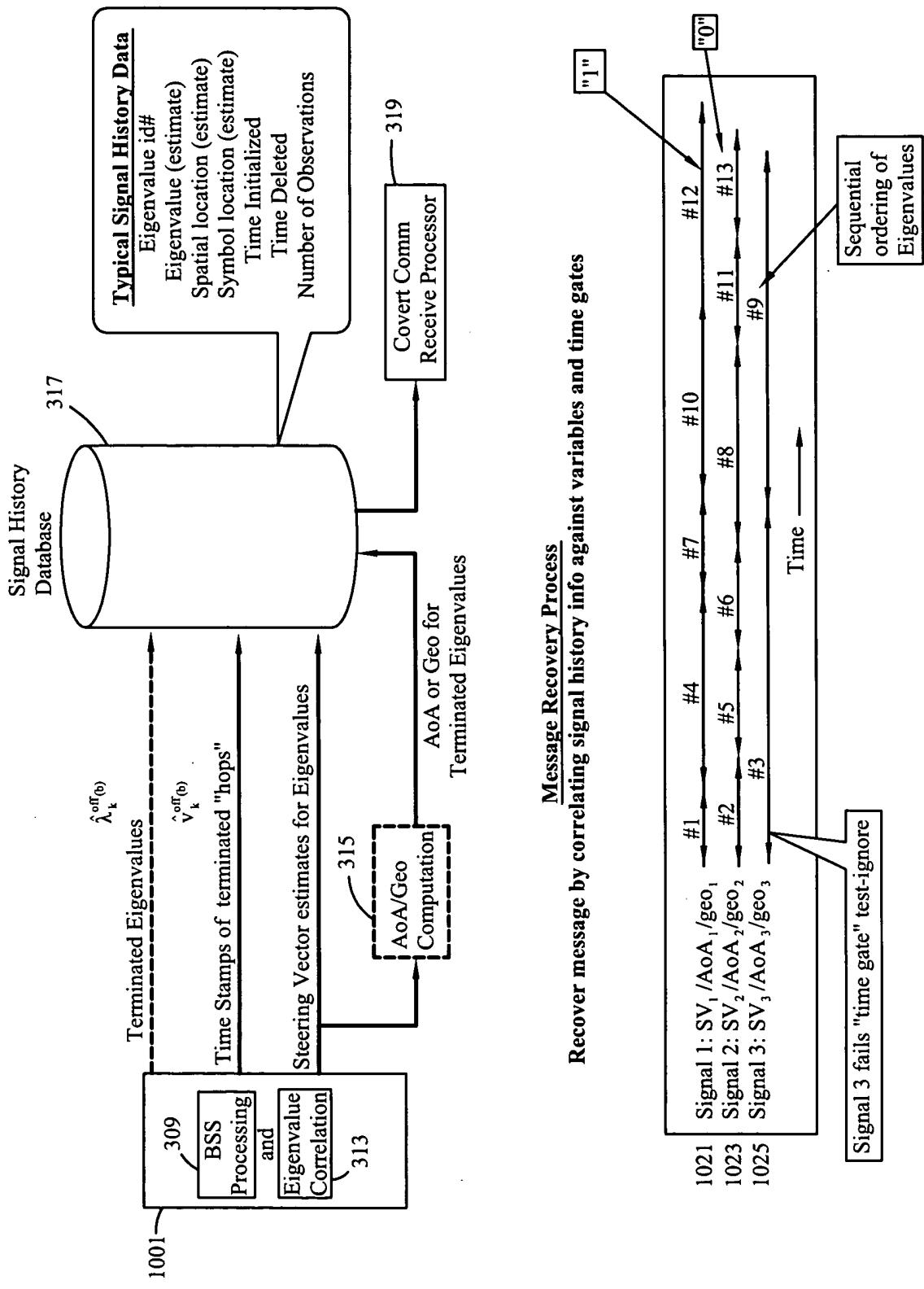


FIGURE 10

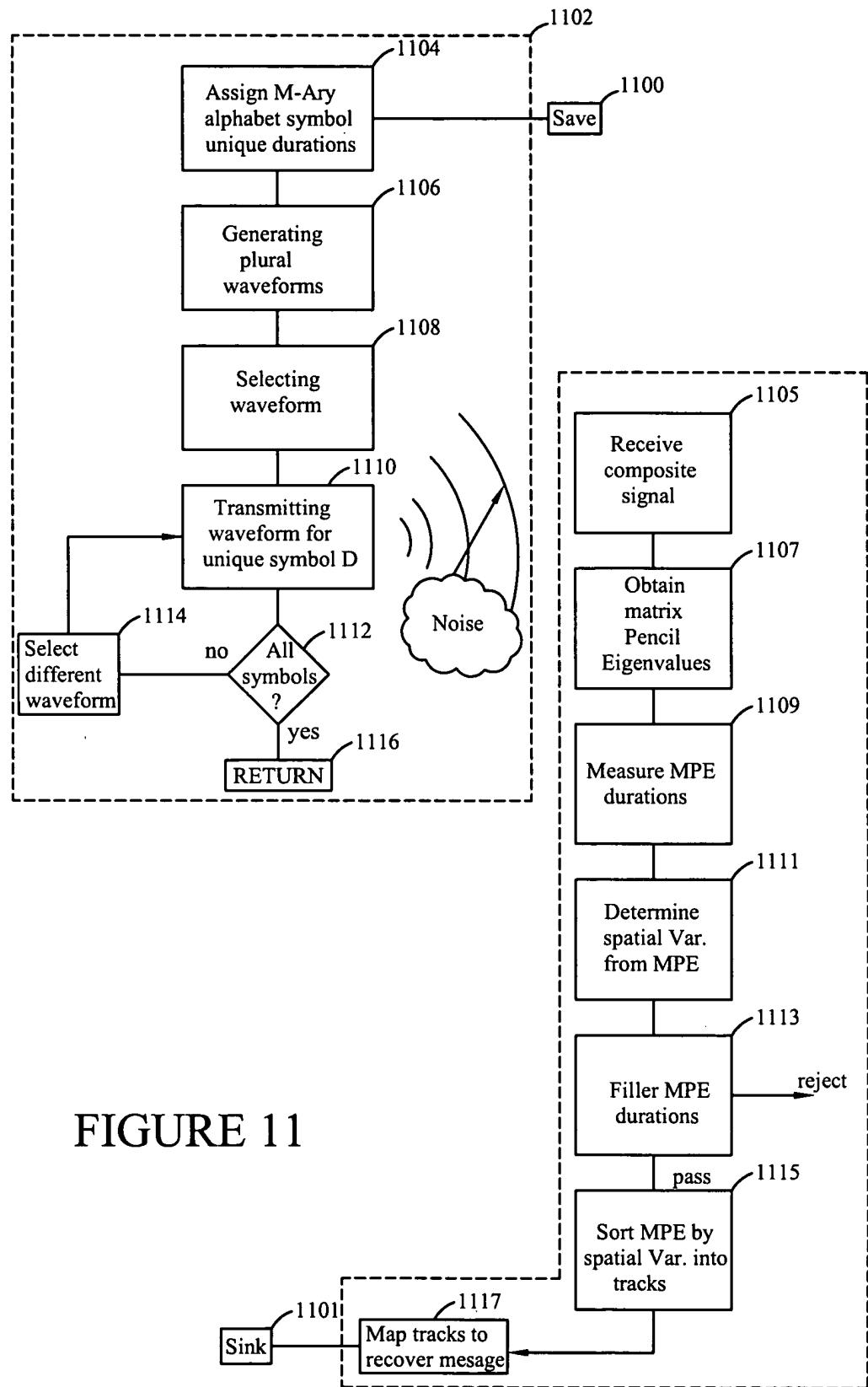
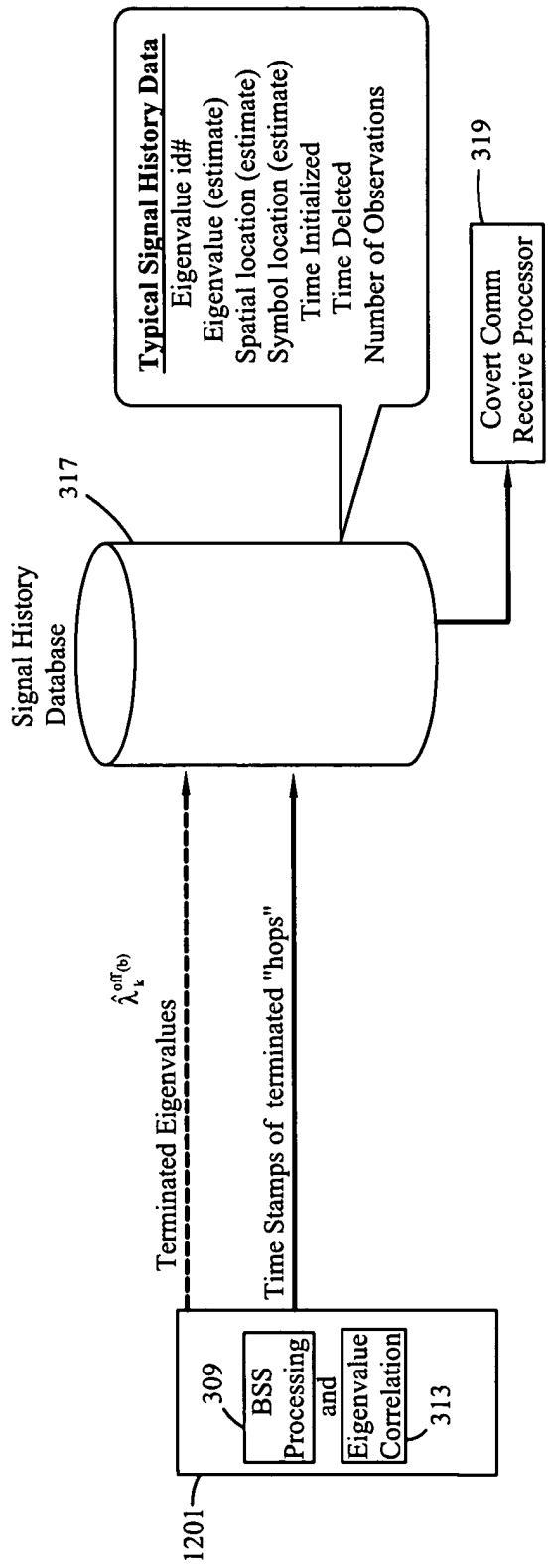


FIGURE 11



**Message Recovery Process**  
Recover message by correlating signal history info against variables and time gates

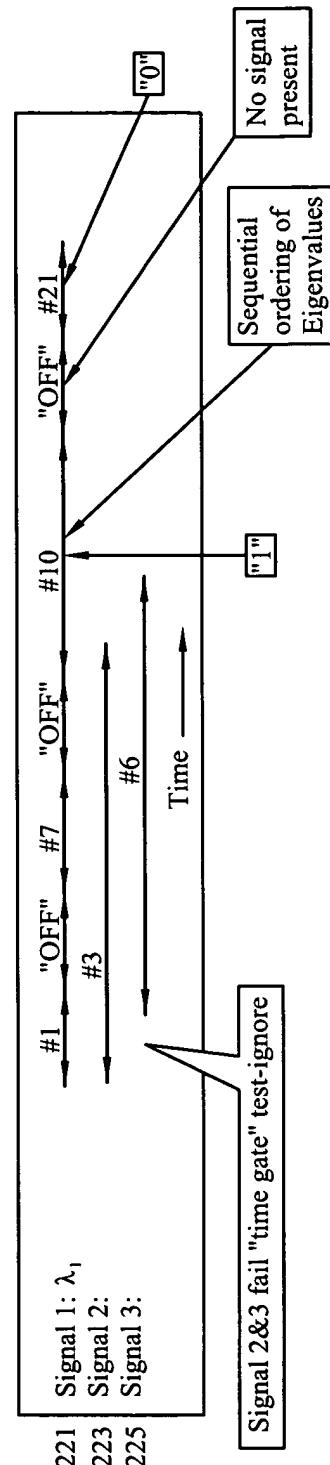


FIGURE 12

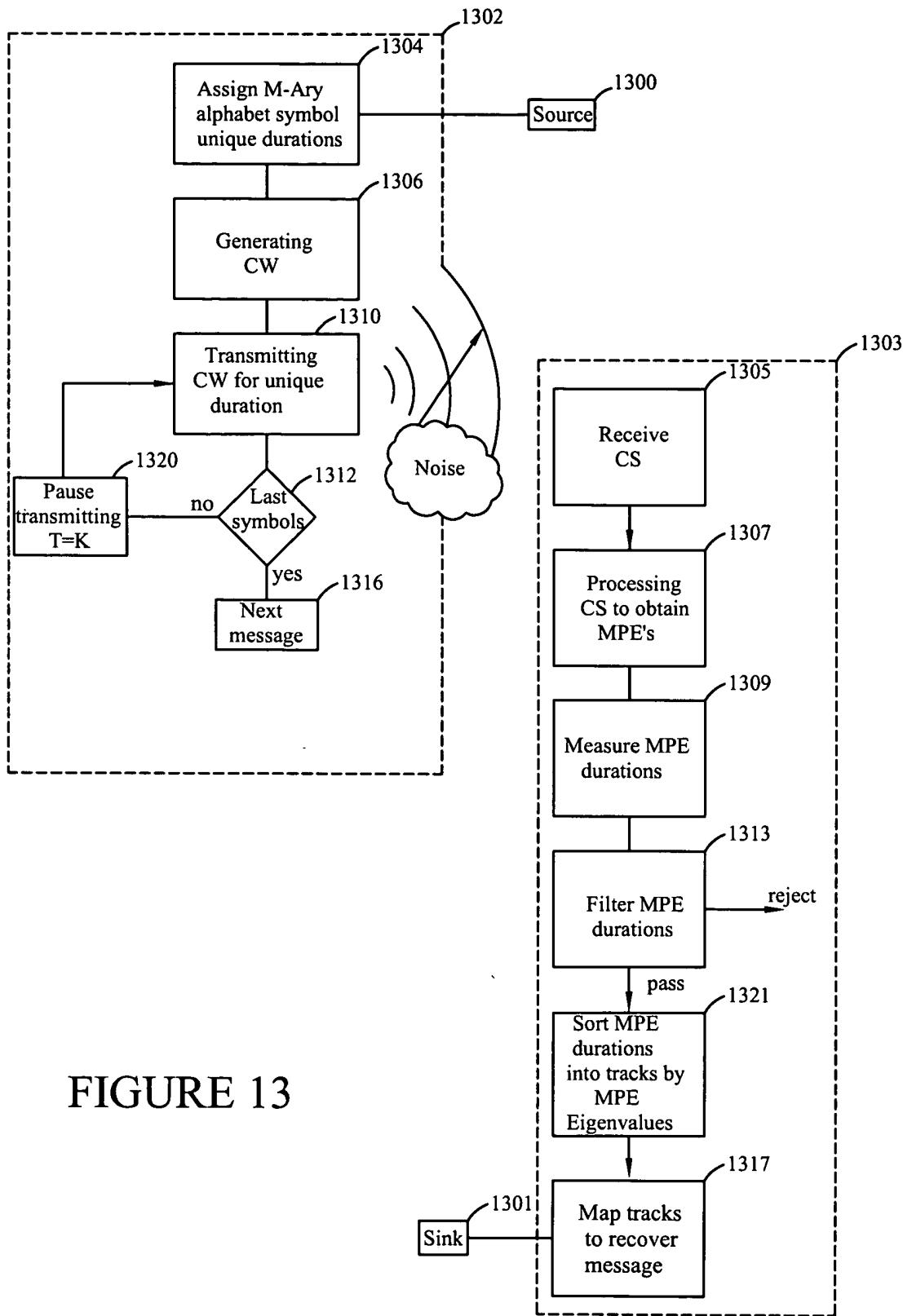


FIGURE 13

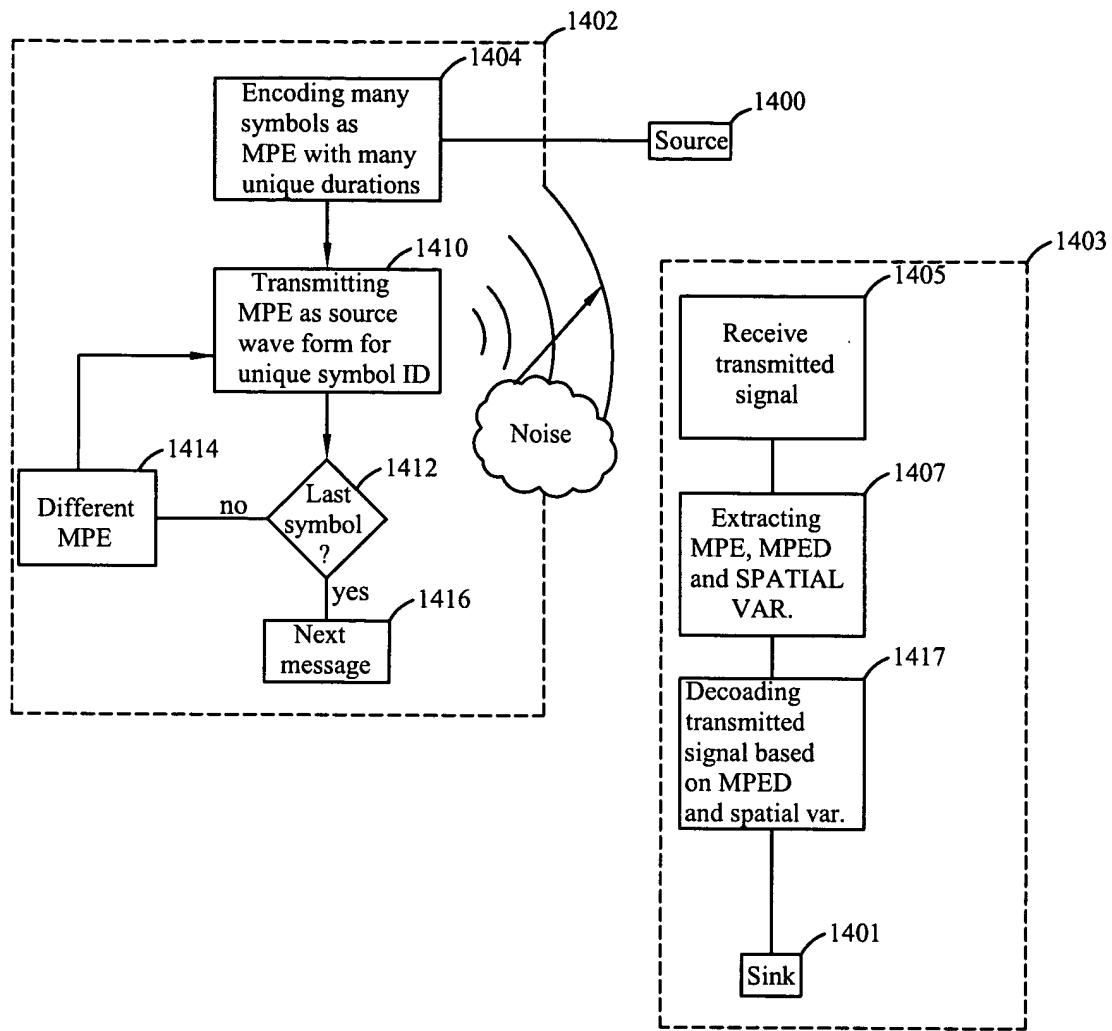


FIGURE 14

Each waveform is unique in 4th- order domain due to contributing effects such as basic waveform shape, phase noise, timing jitter, I/Q imbalance, and filtering.

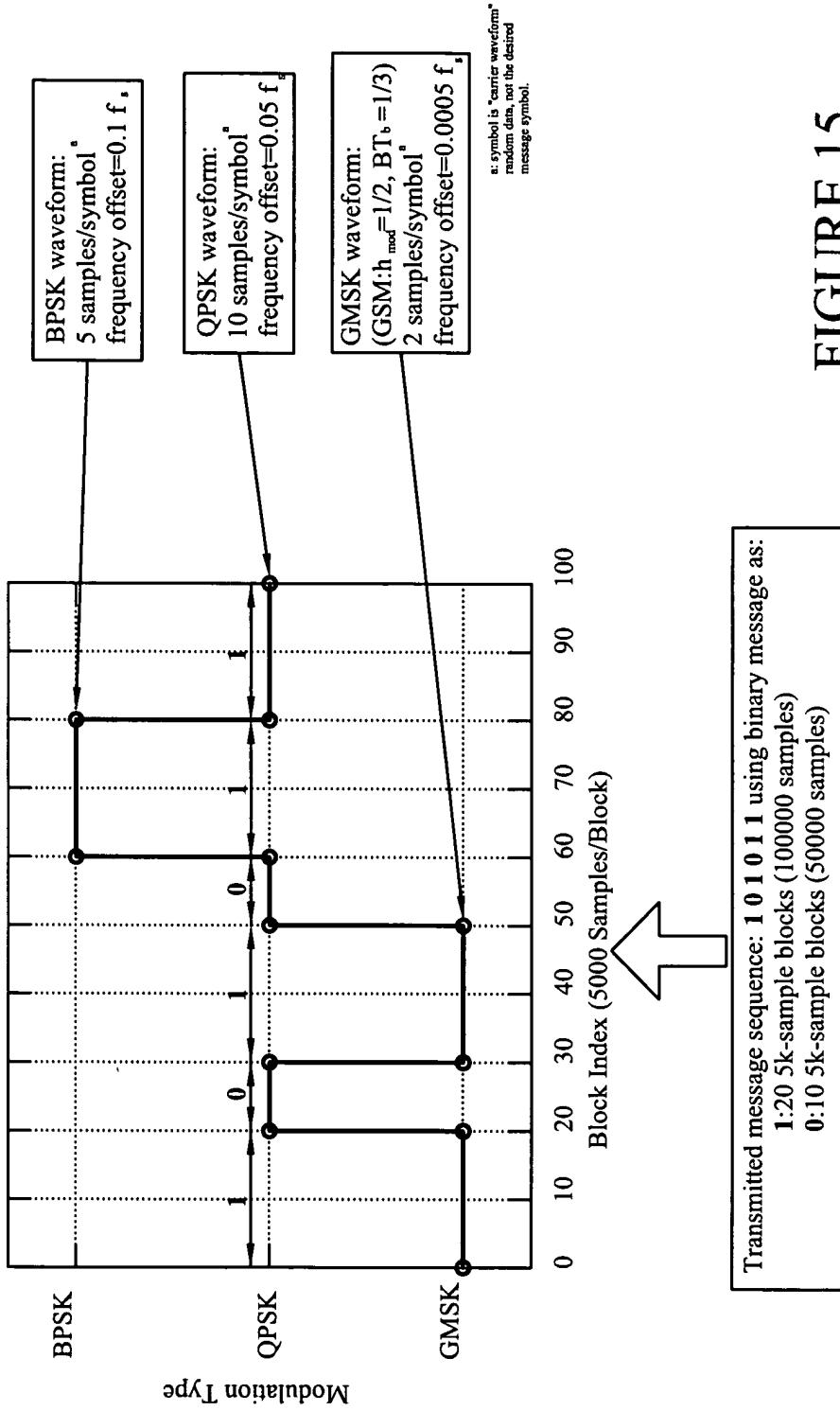


FIGURE 15

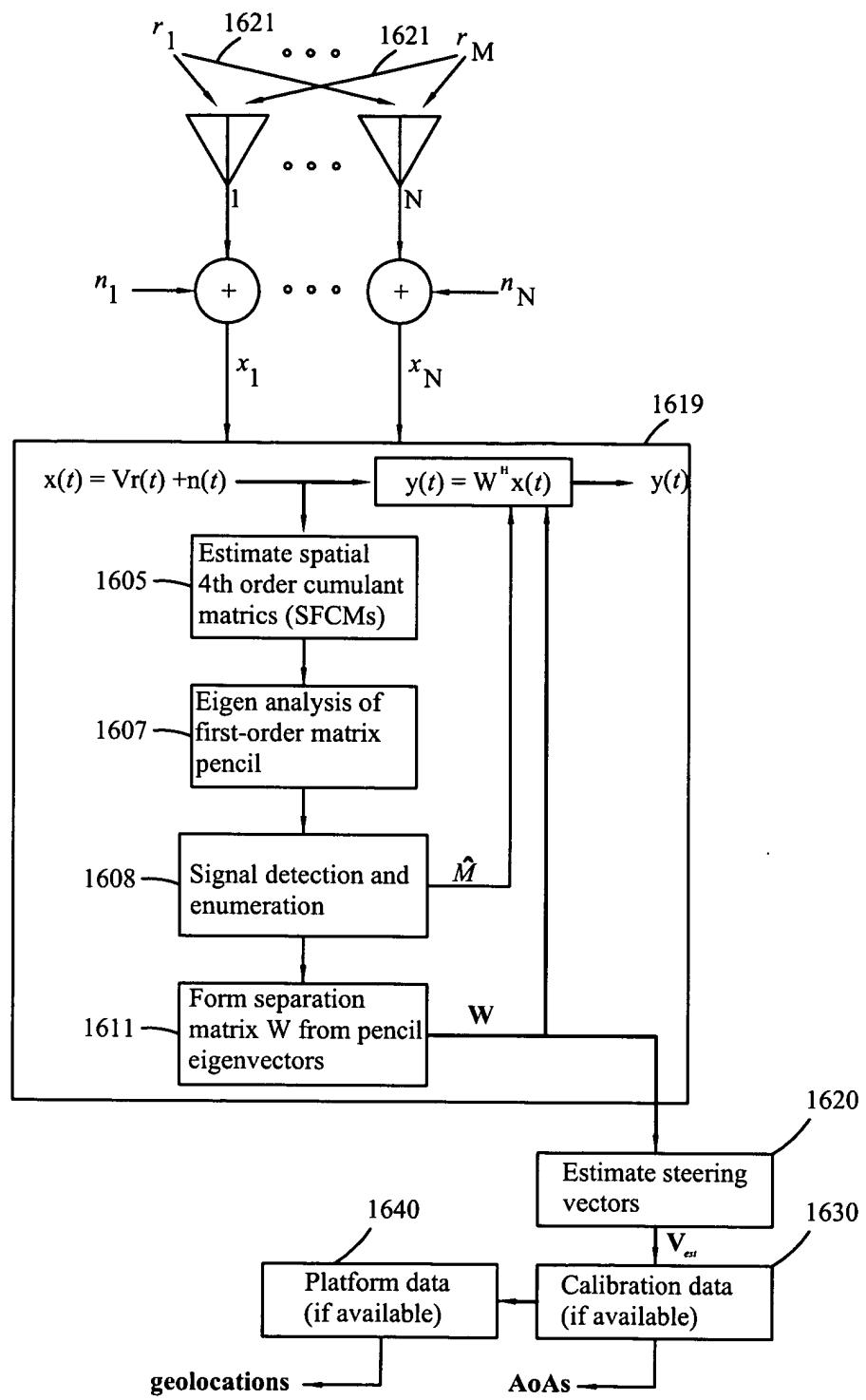


FIGURE 16

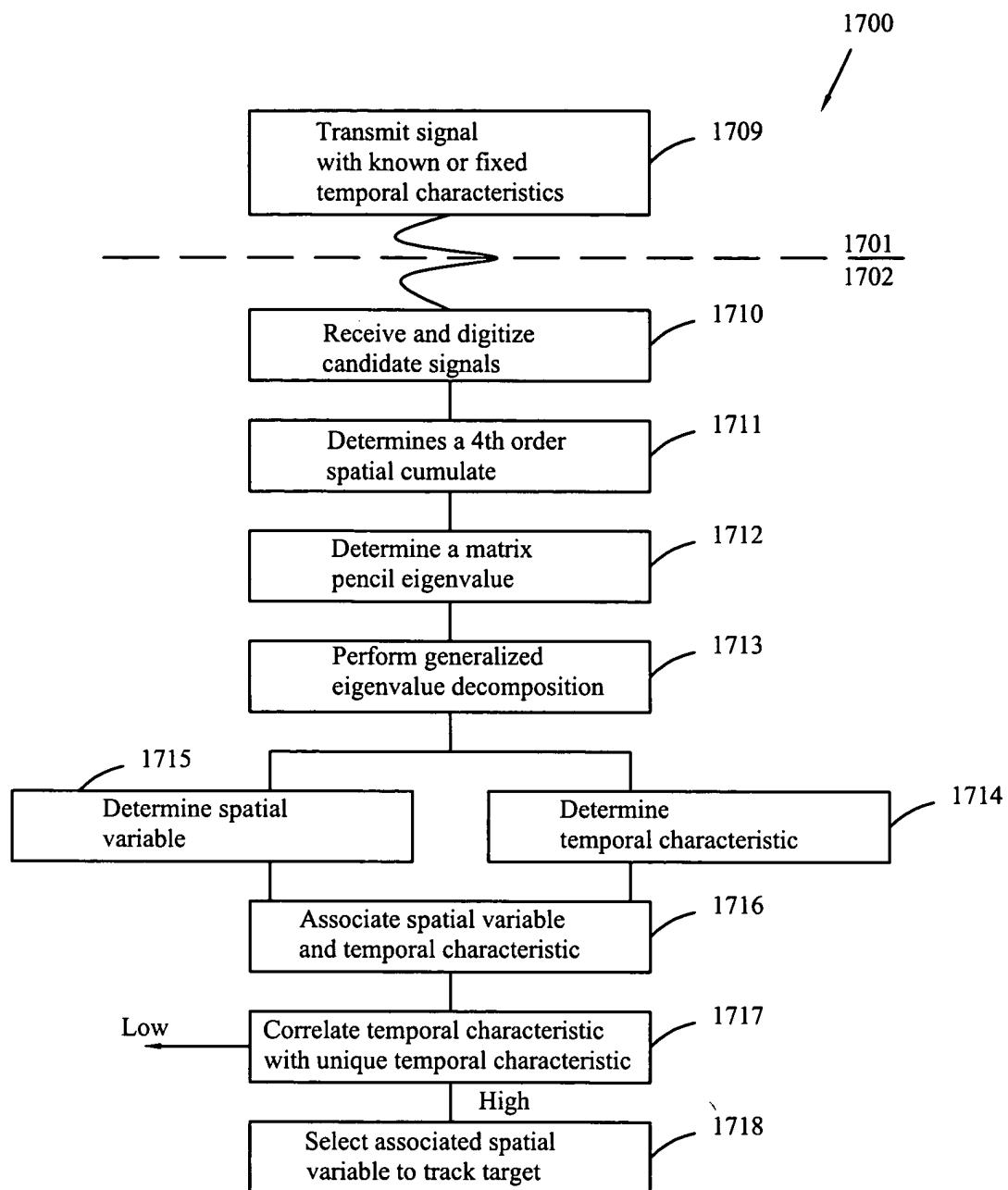


FIGURE 17